

## **REMARKS**

Claims 1, 4-7, 9, 10, 12, 14-16, 19-21, and 30-41 are pending.

The amendments to claims 1, 4 and 10, and the addition of new claims are supported by the specification at page 4, the last 7 lines, page 5, the 8<sup>th</sup> to 3<sup>rd</sup> lines from the bottom, page 6, line 12, the paragraph bridging pages 6 and 7, page 7, lines 2, 14 and 15, page 12, the last two full paragraphs, and page 14, the third full paragraph. No new matter has been introduced.

### Obviousness Type Double Patenting

Applicants respectfully traverse the provisional rejections of the instant claims over the claims of U.S. Patent Applications Nos. 10/169,491 and 10/186,634 under the doctrine of obviousness type double patenting. Applicants request that the provisional rejections be held in abeyance because, when allowable claims are found by the Examiner, applicants would submit terminal disclaimers over U.S. Patent Applications Nos. 10/169,491 and 10/186,634.

### Claim Objection

The deletion of the two parenthetical symbols from claim 5 has rendered the objection of claim 5 moot.

Claim Rejection -- 35 U.S.C. 112, Second Paragraph

Applicants respectfully traverse the rejection of claims 19, 20 and 30-36 for indefiniteness. These claims have been amended by inserting a step of adding the catalyst in a polycondensation reaction, esterification reaction or transesterification between reactants to produce a polyester. Since the polycondensation reaction, esterification reaction or transesterification between at least a polyfunctional alcohol and at least a polyfunctional carboxylic acid or an ester-forming derivative of a polyfunctional carboxylic acid are well known in the art for the production of polyesters, applicants submit that a person skilled in the art would understand the claimed processes for producing the polyester. Withdrawal of the rejection is requested.

Claim Rejection -- 35 U.S.C. 101

Applicants respectfully traverse the rejection of claims 19, 20 and 30-36 as non-statutory matter. Claims 19, 20 and 30-36 have been amended by adding a step to fulfill the requirement of process claims. Withdrawal of the rejection is requested.

Claim Rejections -- 35 U.S.C. 102

Applicants respectfully traverse the rejection of claims 1-9, 12-20, 23, 24, 27-31 and 34-36 over Ridland. The Examiner relied on a catalyst prepared from ( $\text{sec-BuO}_3\text{Al}$ , sodium hydroxide and commercial butyl (acid) phosphate in Example 12 for the rejection. But Applicants contend that Ridland does not teach a polymerization catalyst comprising a phosphorus compound having an aromatic ring and an aluminum substance, wherein the aluminum substance is selected from metal aluminum,

aluminum carboxylates, aluminum salts of an inorganic acid, aluminum chelate compounds, partial hydrolyzates of an organoaluminum compound and aluminum oxides.

For claims 4 and 10, in particular, applicants submit that Ridland does not teach any polymerization catalyst comprising an aluminum substance and at least one phosphorus compound, wherein the aluminum substance is selected from metal aluminum, aluminum carboxylates, aluminum salts of an inorganic acid, aluminum chelate compounds, aluminum oxides and partial hydrolyzates of an organoaluminum compound, and wherein the at least one phosphorus compound is at least a phosphonic or phosphinic acid compound having an aromatic group. Ridland discloses that an aryl phosphate may be included in its catalyst (page 3, line 23), but Ridland does not teach or suggest including a phosphonic or phosphinic acid compound having an aromatic group in its catalyst. This is another reason why claims 4 and 10, as well as claims dependent on claim 4 or 10, should not have been rejected over Ridland.

In addition, concerning the process claims 9, 19, 20 and 30-36, Ridland does not teach using its catalyst in polyester production. This is another reason why claims 9, 19, 20 and 30-36 should not have been rejected over Ridland.

Applicants respectfully traverse the rejection of claims 1-3, 8 and 9 over Thiele because Thiele does not teach or suggest using a phosphorus compound having an aromatic ring and an aluminum substance in a polyester polymerization catalyst. Thiele merely discloses adding a phosphorus-oxygen compound, such as phosphonic acid, to deactivate esterification and reesterification catalysts BEFORE the addition of a zeolite polycondensation catalyst, but no aromatic phosphorus compound was suggested

(column 4, lines 4-10). Because Thiele teaches adding the phosphorus compound before the addition of a zeolite polycondensation catalyst, the phosphorus compound is actually not a part of the zeolite polycondensation catalyst (column 4, lines 4-19). The phosphorus compound in Thiele functions merely as a deactivator of esterification or transesterification catalyst. This is another reason why Thiele fails to anticipate the instant claims.

Applicants respectfully traverse the rejection of claims 1-6, 8-11, 17, 19, 24-26 and 31-33 over Bayer. The catalyst disclosed in Bayer is for the polymerization of unsaturated polyester. The polymerization of unsaturated polyester is vinyl polymerization, i.e. the addition polymerization of vinyl compounds involving the addition reaction of -C=C- bonds. Such a chemical reaction is different from the polyester polymerization catalyzed by the catalyst of the present invention. In the present invention, the catalyst is used for polycondensation or to produce polyester through forming ester bonds, i.e. -C(O)-O-. Bayer does not disclose or suggest any polyester polymerization catalyst. Bayer only discloses vinyl polymerization catalyst. These two catalysts are different.

Applicants respectfully traverse the rejection of claims 1, 2, 5, 17 and 19 over Jackson (US '873) or Jackson et al (GB '146) because Jackson (US) and Jackson et al (GB) do not teach a polyester polymerization catalyst comprising an aluminum substance and a phosphorus compound having an aromatic ring, wherein the aluminum substance is selected from metal aluminum, aluminum carboxylates, aluminum salts of an inorganic acid, aluminum chelate compounds, aluminum oxides and partial hydrolyzates of an organoaluminum compound. Jackson (US) teaches only the

combination of aluminum acetylacetone and diethyl hexadecylphosphonate, which is not aromatic (see Table in columns 5 and 6) and Jackson et al (GB) merely discloses the use of aluminum acetylacetone and dimethyl phosphinic acid compound or methyl dimethylphosphonate, which are not aromatic (see page 7, Examples 19 and 20 in Table).

Withdrawal of the anticipatory rejections is requested.

Claim Rejections -- 35 U.S.C. 103

Applicants respectfully traverse the rejection of claims 10, 11, 21, 22, 25, 26, 32 and 33 over Ridland for obviousness. Ridland does not disclose or suggest using a polymerization catalyst comprising an aluminum substance and at least one phosphorus compound, wherein the at least one phosphorus compound is at least a phosphonic or phosphinic acid compound having an aromatic group, and wherein the aluminum substance is selected from metal aluminum, aluminum carboxylates, aluminum salts of an inorganic acid, aluminum chelate compounds, aluminum oxides and partial hydrolyzates of an organoaluminum compound. The Examiner relied on the disclosure of aryl phosphates in page 3, line 23, of Ridland, but aryl phosphates are not phosphonic or phosphinic acid compounds having an aromatic group. There is no motivation for a person of ordinary skill in the art to arrive at the claimed invention, i.e. the polymerization catalyst as claimed.

Withdrawal of the obviousness rejection is requested.

Conclusion

In view of the above reasoning, applicants submit that the application is in a condition for allowance. A Notice of Allowance is believed in order.

In case this paper is not deemed timely, applicants petition for an appropriate extension of time. The petition fee, and any other fees that may be required in relation to this paper, can be charged to Deposit Account No. 11-0600 referencing Docket No. 11197/7.

Respectfully submitted,  
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